WHAT IS CLAIMED IS:

1. An optical disk control device comprising:

a playback signal detection means for detecting data recorded on a disk by irradiating the disk with a converged light beam;

a signal switching means for successively selecting plural data signals obtained by the playback signal detection means, and performing time-division-multiplexing on the selected signals;

an A/D conversion means for converting an analog signal which has been time-division-multiplexed by the signal switching means, into a digital signal;

an A/D conversion command means for generating an A/D conversion command of the A/D conversion means;

a serial transfer means for serial-transferring the command signal generated by the A/D conversion command means;

a serial reception means for receiving the signal from the serial transfer means, and controlling the signal selection operation of the signal switching means on the basis of the received signal; and

an arithmetic means for generating an optical disk drive controlling signal by performing arithmetic processing on the digital signal outputted from the A/D control means.

2. An optical disk control device as defined in Claim 1 comprising:

an analog signal processing means including the playback

signal detection means, the signal switching means, and the serial reception means; and

a digital signal processing means including the A/D conversion means, the A/D conversion command means, and the serial transfer means.

3. An optical disk control device as defined in Claim 2, wherein:

a plurality of the analog signal processing means are provided; and

the A/D conversion means successively selects, in a predetermined order, the output signals from the signal switching means in the plural analog signal processing means, and successively converting the selected signals into.digital signals.

4. An optical disk control device as defined in Claim 2, wherein:

the analog signal processing means further includes a sample hold means for sampling and holding the output signal from the signal switching means, on the basis of the signal transferred from the serial transfer means; and

the A/D conversion means converts the analog signal which is sampled and held by the sample hold means, into a digital signal, instead of the output signal from the signal switching means.

5.   An optical disk control device as defined in Claim 3, wherein:

   each of the plural analog signal processing means further includes a sample hold means for sampling and holding the output signal from the signal switching means, on the basis of the signal transferred from the serial transfer means; and

   the A/D conversion means converts the analog signal which is sampled and held by the sample hold means, into a digital signal, instead of the output signal from the signal switching means.

6.   An optical disk control device as defined in Claim 4, wherein the analog signal processing means includes a pair of the signal switching means, and a pair of the sample hold means.

7.   An optical disk control device as defined in Claim 4, wherein each of the plural analog signal processing means includes a pair of the signal switching means, and a pair of the sample hold means.

8.   An optical disk control device as defined in Claim 1 or 2, wherein:

   the serial transfer means is controlled on the basis of the conversion command from the A/D conversion command means; and

   the output signal from the playback signal detection means is transferred to the A/D conversion means, for every conversion

command, according to the signal from the serial reception means.

9. An optical disk control device as defined in Claim 1 or 2, wherein:

the conversion command from the A/D conversion command means, which is obtained from the serial reception means, includes a selection signal; and

the signal switching means is operated on the basis of the selection signal, and the time-division-multiplexed signal is transferred to the AD conversion means for every A/D conversion command.

10. An optical disk control device as defined in Claim 1 or 2, wherein:

the serial transfer means and the serial reception means perform state-setting communication for setting the internal state of the optical disk control device, in addition to communication for the conversion command from the A/D conversion command means; and

discrimination between these communications is performed according to identifying signals or bit lengths.

11. An optical disk control device as defined in Claim 4, wherein:

the analog signal processing means further includes a

variable gain amplification means for amplifying the output signal from the sample hold means;

the A/D conversion means converts the analog signal which is amplified by the variable gain amplification means, into a digital signal, instead of the output signal from the sample hold means; and

the gain of the variable gain amplification means is set by a state-setting signal which is transferred by state-setting communication for setting the internal state of the optical disk control device.

12.   An optical disk control device as defined in Claim 5, wherein:

each of the plural analog signal processing means further includes a variable gain amplification means for amplifying the output signal from the sample hold means;

the A/D conversion means converts the analog signal which is amplified by the variable gain amplification means, into a digital signal, instead of the output signal from the sample hold means; and

the gain of the variable gain amplification means is set by a state-setting signal which is transferred by state-setting communication for setting the internal state of the optical disk control device.

13. An optical disk control device as defined in Claim 11, wherein the analog signal processing means includes a pair of the sample hold means, and a pair of the variable gain amplification means.

14. An optical disk control device as defined in Claim 12, wherein each of the plural analog signal processing means includes a pair of the sample hold means, and a pair of the variable gain amplification means.